

REMARKS

Applicants acknowledge that the Office Action dated September 27, 2007 has been made final. Accordingly, a Request for Continued Examination has been submitted concurrently herewith, and further consideration of this application in view of the foregoing amendment and the remarks set forth hereinafter is respectfully requested.

Claims 1, 2, 4 and 6-14 have been rejected under 35 U.S.C. §112, second paragraph for failing to particularly point out and distinctly claim the invention, based on certain formal issues identified on page 2 of the Office Action. In response to this ground of rejection, Applicants have amended Claims 1 and 6-9 in a manner which addresses and is believed to resolve each of the cited formal issues. Accordingly, reconsideration and withdrawal of this ground of rejection is respectfully requested.

The disclosure has been objected to on the ground that the reference label "TM" needs a corresponding description relative to the specification's description of the drawing Figure 5. In this regard, the Office Action notes that the description at page 6, line 24 refers only to figure 4, not to figure 5.

Clarification and/or reconsideration of this ground of rejection is respectfully requested. Applicants note in this regard that the reference

designation "TM" is discussed with regard to both Figures 4 and 5 in the second and third full paragraphs on page 8 of the specification. Concerning Figure 4, in particular, the specification notes that the reference label "TM denotes the metallization, which forms one wall of the waveguide filter in the arrangement according to the invention". With respect to Figure 5, the specification notes that, "The waveguide filter HF is formed by the filter upper part FB,...being fitted with a high-precision to the metallized upper face TM of the substrate S, as illustrated in Figure 4." Accordingly, Applicants believe that the reference label "TM" is adequately explained with regard to both Figures 4 and 5. The portion of the specification at page 6, line 24 referred to in the Office Action was not cited or relied on by Applicants in this regard. In particular, that portion of the specification is contained within the Brief Description of the Drawings, and states that Figure 5 shows a cross-section along the section line B-B' in Figure 2 and Figure 4. Applicants respectfully submit that this portion of the specification does not detract from the explanation of the significance of the reference label "TM" as set forth on page 8 of the specification with regard in particular to both Figures 4 and 5. Accordingly, if the Examiner continues to regard that further amendment of the specification is required, clarification is requested.

Claims 1, 2, 4 and 6-14 (all claims of record) have been rejected under 35 U.S.C. §102 as being anticipated by Takahashi et al (U.S. Patent No. 6,225,878). However, for the reasons set forth hereinafter, Applicants respectfully submit that Claims 1, 2, 4 and 6-14 distinguish over Takahashi et al, whether considered separately or in combination with other references.

The Office Action indicates that Takahashi et al discloses a waveguide filter comprising a glass substrate 301 having an upper face thereof coated by a co-planar conductive pattern, which includes a microstrip filter pattern 309, a co-planar ground pattern substantially surrounding the microstrip filter pattern 309, and at least one metallic co-planar waveguide stripline portion 308 electromagnetically coupled to the microstrip filter pattern so as to provide an input/output coupling to the microstrip pattern. In addition, the Office Action also states that the Takahashi et al includes a "component" (silicon substrate 302) which includes a cavity 303 that includes "side walls", with a metal ground layer coated on the side wall surfaces of the silicon substrate.

Finally, the Office Action also states that the hollow cavity 303 of the component further includes "a thin circumferential periphery or 'web' which provides a portion of the ground plane 304 in electric contact with the grounding plane 308 of the substrate 301". At the top of page 4, the Office Action states

that the “thin ‘periphery’ of the ‘web’ is a closed structure such that the periphery ‘follows the structure’” of the cavity within the component 302.

Insofar as Applicants understand, the Office Action equates the circumferential web to the thin peripheral portion of the silicon substrate 302 which is parallel to the ground plane and is closest to it. Applicants note in this regard that the Takahashi et al patent contains no discussion which suggests that this portion of the silicon substrate 302 constitutes a circumferential web as suggested in the Office Action. However, accepting for the sake of discussion that that portion of the silicon substrate 302 can be considered to constitute a “circumferential web”, it is clearly “resting” on the microbumps 306, as can be seen in both Figures 6A and 6B. Accordingly, to the extent that this portion of the silicon substrate 302 can be considered to correspond to the circumferential web, it clearly does not rest on the structured metallic layer on the upper face of the substrate as recited in Claim 1.

The Office Action states that the circumferential web of the component 302 must necessarily rest on the metallic layer or ground plane of the substrate 301 to provide the electrical contact between the ground plate and the component. Applicants note in this regard, however, that the Office Action also states that the component 302 is resting on the conductive microbumps in Takahashi et al. In fact according to Takahashi et al, the web is resting on the

microbumps, and not on the ground plane itself as cited in the claims of the present application. Thus, as indicated at Column 5, lines 41-44, "in addition, an Au microbumps 306 is formed on a flat face around the cavity 303, for the use in mounting as a connection part electrically connected to the metal ground layer 304 formed on the cavity 303". In addition, the specification also states that the silicon substrate 302 is mounted on the glass substrate 301 through the gold microbumps 306. The latter, however, are in the form of discrete projections, as can clearly be seen in Figures 6A and 6B. As is shown in Figure 6A, the silicon substrate 302 is therefore separated from the metal patterning 309 by a gap which results from the metal microbumps. While the latter electrically connect the two components, they do not constitute a circumferential web as recited in the claims.

According to the invention, the provision of the circumferential web provides a conductive solder or adhesive that joins the component and the ground plane. Thereby, it is insured that no solder can flow into the interior space of the filter, which is formed by joining the upper filter part and the ground plate together. This is in contrast to the structure in Takahashi et al, in which solder could flow into the interior space of the filter, which would affect its electrical characteristics.

In light of the foregoing remarks, this application should be in consideration for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #056226.56029US).

Respectfully submitted,



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